REMARKS/ARGUMENTS

Status of Claims

Claims 1-18 stand rejected.

Claims 1-4 are currently amended.

Claim 19 is new.

Thus, claims 1-19 are pending in this patent application.

The Applicants hereby request further examination and reconsideration of the presently claimed application.

Claim Rejections – 35 U.S.C. § 103

Claims 1-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2004/0004955 (*Lewis*) in view of U.S. Patent Publication 2002/0116669 (*Jain*) and U.S. Patent 7,315,510 (*Owens*). Claim 3 has been rewritten into independent form, and claims 2 and 4-18 depend from independent claim 1. Thus, claims 1-18 stand or fall on the application of the combination of *Lewis*, *Jain*, and *Owens* to independent claims 1 and 3. As noted by the United States Supreme Court in *Graham v. John Deere Co. of Kansas City*, an obviousness determination begins with a finding that **"the prior art as a whole in one form or another contains all of the elements of the claimed invention"**. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 22 (U.S. 1966). The Applicants respectfully submit that the combination of *Lewis*, *Jain*, and *Owens* does not contain all of the elements of independent claims 1 and 3, and therefore fails to render obvious claims 1-18.

The combination of *Lewis, Jain*, and *Owens* fails to render obvious claims 1-18 because the combination of *Lewis, Jain*, and *Owens* fails to disclose a message that comprises label

binding information comprising an identifier of the work label switching path (LSP), a type of the LSP, and a protection mode. Claims 1 and 3 read:

> 1. A method for binding a work label switching path (LSP) with a protection LSP, comprising:
>
> a Path Switching Label Switching Router (PSL) **transmitting a first message which comprises a binding information** to a Path Merging Label Switching Router (PML) to request for creating the protection LSP of the work LSP;
>
> the PML router assigning a label for the protection LSP based on the first message, and returning a second message which comprises the binding information;
>
> upon receiving the second message, the PSL router binding the work LSP with the protection LSP according to the binding information, and **transmitting a notification message which comprises the binding information to the PML switched router**; and
>
> the PML router binding the work LSP with the protection LSP according to the binding information in the notification message,
>
> **wherein the binding information comprises an identifier of the work LSP, a type of the LSP, and a protection mode**, and
>
> wherein the PSL and PML are label edge routers.
>
> 3. A method for binding a work label switching path (LSP) with a protection LSP, comprising:
>
> in the process of creating the protection LSP, a Path Switching Label Switching Router (PSL) **transmitting a first message which comprises a binding information** to a Path Merging Label Switching Router (PML) to request for creating the protection LSP of the work LSP;
>
> the PML router assigning a label for the protection LSP based on the first message, and returning a second message which comprises the binding information;
>
> upon receiving the second message, the PSL router binding the work LSP with the protection LSP according to the binding information, and **transmitting a notification message which comprises the binding information to the PML switched router**; and
>
> the PML router binding the work LSP with the protection LSP according to the binding information in the notification message,
>
> if the protection mode for the work LSPs is 1+1 mode, **the binding information comprises the work LSP identifier, LSP type, and the protection mode**; and
>
> if the protection mode for the work LSPs is 1:1, **the binding information comprises the work LSP identifier, LSP type, the protection mode** and selection mode of the return LSP in the 1:1 protection mode.

(Emphasis added). As shown above, claims 1 and 3 require a message that comprises label binding information comprising **an identifier of the work LSP, a type of the LSP, and a protection mode.** The Examiner asserts that *Jain's* paragraphs 21 and 106 disclose label binding information comprising an identifier of the work LSP, a type of the LSP, and a protection mode. *See* Office Action dated May 12, 2010, pp. 6-7. However, ***Jain's* fault notification message does not contain any label binding information**, much less the identifier of the work LSP, a type of the LSP, and a protection mode:

> Then, program flow moves to a state 906 in which a level or type of protection criteria for the resource identified in the state 904 may be specified. This criteria may, for example, specify a level of redundancy available to the resource. The level or kind of criteria specified in the state 906 will generally result from the topology of the network and from characteristics of individual network elements. For example, the protection provided may be 1:1, 1:n, 1+1, ring, or fast re-route. Fast re-route may be as explained above in reference to FIGS. 6-8 or another fast re-routing technique. Further, these criteria may be further specified according to classes and sub-classes of protection. For example, 1:1 protection may be considered a special case of 1:n protection that provides a higher level of fault tolerance than other 1:n levels.
>
> The network may be a label-switching network. Label switching may be performed in accordance with MPLS. **Propagation of a fault notification label may be by an interior gateway protocol (IGP). Propagation of the fault notification may include sending the fault notification by a label switched packet. The label switched packet may have a fault information label (FIL) that distinguishes the fault notification from data traffic.** A substantially same FIL may be sent with each fault notification regardless of which network node originates the fault notification. Or, each network node may originate fault notifications having a FIL that is unique to the node. Network nodes that would be affected by the corresponding point of failure may store the indicia of the identified possible points of failure. The network nodes that would be affected by the corresponding point of failure may set up a label-switched path that uses a resource identified by the corresponding point of failure. At least one of the network nodes that receives a fault notification that corresponds to a point of failure that affects operation of the node may recover from the fault.

Jain, ¶¶ 106 and 21 (emphasis added). As shown above, *Jain's* fault notification message comprises a fault information label (FIL) that **identifies the fault notification message**, not the

work LSP. Further, *Jain's* fault notification message fails to contain any information identifying the type of LSP or the protection mode. Thus, *Jain* fails to disclose a message that comprises label binding information comprising an identifier of the work LSP, a type of the LSP, and a protection mode. *Lewis* fails to make up for the deficiencies of *Jain*. *Owens* does not make up for the shortcomings of *Lewis* and *Jain* because *Owens'* label binding information does not specify an identifier of the work LSP, a type of the LSP, or a protection mode:

> A "label distribution protocol" is a set of procedures by which one LSR (i.e., a network switch element) informs another of the label bindings it has made. **"Label binding" is a process by which a message to be sent from a source to a destination is associated with various labels between the nodes that lie along the way, between the source and destination.** By way of example, in FIG. 1, a message to be sent from switch 1 to switch 7 is associated or bound to travel to switch 7 through switch 2 by, or using, the label L_{12} that is first associated with the message at, or by, switch 1. Switch 2 in turn associates messages labeled L_{12} as bound for switch 3 and re-labels them as L_{23}. Re-labeling messages (e.g. re-labeling a message received at switch 2 on L_{12}, as the same message that is output from switch 2 but on L_{23} and which is received at switch 3, to be re-labeled by switch 3 and output again as L_{34}) is known as "label binding." Two or more LSRs, (network switch elements) which use a label **distribution protocol to exchange label binding information are known as "label distribution peers" with respect to the binding information they exchange.**

Owens, col. 11, ll. 12-30 (emphasis added). As shown above, *Owens'* label binding is a process that associates different labels with the label switched path (LSP). The label merely identify the LSP; they do not provide any information regarding the type of LSP or the protection mode. Thus, *Owens'* binding information does not identify the work LSP, the type of LSP, or the protection mode. As such, the combination of *Lewis, Jain*, and *Owens* fails to disclose at least one limitation of claims 1 and 3, and consequently fails to render obvious claims 1-18.

In addition, the combination of *Lewis, Jain*, and *Owens* fails to render obvious claims 1-18 because the combination of *Lewis, Jain*, and *Owens* does not disclose a PSL router that

transmits a notification message comprising binding information to a PML router. Claims 1 and 3 read:

> 1. A method for binding a work label switching path (LSP) with a protection LSP, comprising:
>
> a Path Switching Label Switching Router (PSL) transmitting a first message which comprises a binding information to a Path Merging Label Switching Router (PML) to request for creating the protection LSP of the work LSP;
>
> the PML router assigning a label for the protection LSP based on the first message, and returning a second message which comprises the binding information;
>
> upon receiving the second message, **the PSL router** binding the work LSP with the protection LSP according to the binding information, and **transmitting a notification message which comprises the binding information to the PML switched router**; and
>
> the PML router binding the work LSP with the protection LSP according to the binding information in the notification message,
>
> wherein the binding information comprises an identifier of the work LSP, a type of the LSP, and a protection mode, and
>
> wherein the PSL and PML are label edge routers.
>
> 3. A method for binding a work label switching path (LSP) with a protection LSP, comprising:
>
> in the process of creating the protection LSP, a Path Switching Label Switching Router (PSL) transmitting a first message which comprises a binding information to a Path Merging Label Switching Router (PML) to request for creating the protection LSP of the work LSP;
>
> the PML router assigning a label for the protection LSP based on the first message, and returning a second message which comprises the binding information;
>
> upon receiving the second message, the PSL router binding the work LSP with the protection LSP according to the binding information, and **transmitting a notification message which comprises the binding information to the PML switched router**; and
>
> the PML router binding the work LSP with the protection LSP according to the binding information in the notification message,
>
> if the protection mode for the work LSPs is 1+1 mode, the binding information comprises the work LSP identifier, LSP type, and the protection mode;
>
> if the protection mode for the work LSPs is 1:1, the binding information comprises the work LSP identifier, LSP type, the protection mode and selection mode of the return LSP in the 1:1 protection mode.

(Emphasis added). As shown above, claims 1 and 3 require a PSL router that transmits a notification message comprising binding information to the PML router. The Examiner asserts that *Lewis* transmits a notification message comprising the binding information to the PML switched router. *See* Office Action dated May 12, 2010, p. 4. However, *Lewis'* error notification message sent from his LSR 108 to his label edge router (LER) 110 **does not comprise any binding information**:

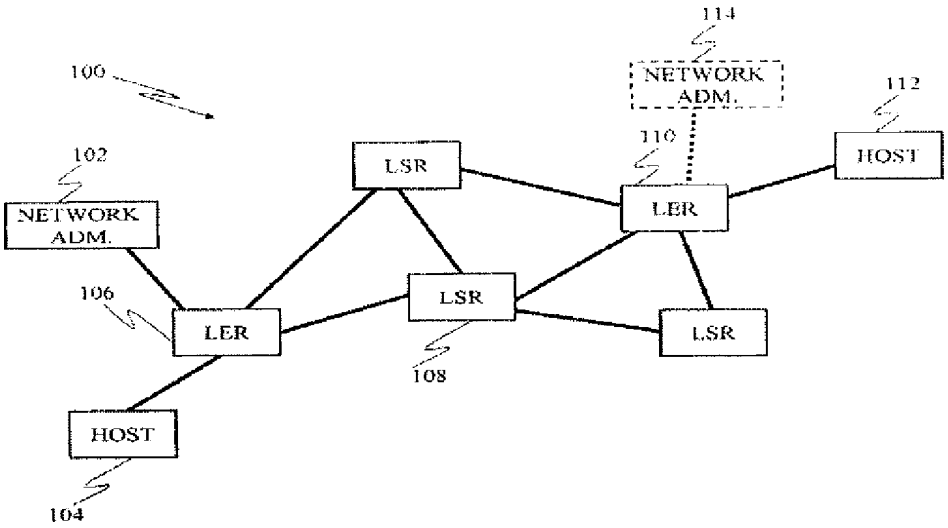

FIG. 1

> The treatment of the RESV message 308 in the preferred embodiment is consistent with that prescribed in the RSVP standard. The RESV message 308 is forwarded towards the LER 106 along the same route of the first LSP path message. Upon receipt, the transit router 108 looks into the message 308 to determine if it has sufficient available resources to provide the bandwidth and QOS requested in the previous PATH message 304 for the forward LSP. If available, the transit router 108 updates its MPLS forwarding table with the MPLS label from the LER 110 and outgoing port number included in the RESV message 308. If the check fails for lack of available resources, for example, **transit router 108 returns an error notification to the LER 110 that made the initial request.**

Lewis, FIG. 1 and ¶ 44 (emphasis added). As shown above, *Lewis's* LER 110 (e.g. the PML router) receives an error notification message, but ***Lewis* does not disclose that the error**

notification message contains any binding information. Additionally, it is well known that the PSL router is the upstream edge router and the PML router is the downstream edge router along the LSP. *See, e.g.,* FIG. 1 and ¶ 30 of the Applicants' specification. However, *Lewis'* error notification message is transmitted from an **intermediate router** (i.e. transit router 108), not from the PSL **edge router** (i.e. LER 106). Thus, *Lewis* fails to disclose a PSL router that transmits a notification message comprising binding information to a PML router. *Jain* fails to make up for the shortcomings of *Lewis* because *Jain's* fault notification message does not comprise any binding information, and *Jain* does not disclose that the fault notification message is sent from the PSL to the PML:

> A conventional technique for detecting and responding to such faults involves a node detecting a fault in one of its associated communication links, such as through a link-layer detection mechanism. Then, fault notifications are transmitted among routers using a network-layer mechanism. **A fault notification is required for each LSP** that uses the faulty link so as to initiate re-routing of the LSP around the faulty link. Thus, **fault notification is performed on the basis of individual LSPs**. This scheme has a disadvantage where a fault affects a large number of LSPs because a correspondingly large number of fault notifications are required. While such fault notifications are being propagated, significant quantities of critical data can be dropped.
>
> **When a fault occurs, it is generally detected by one of the network nodes. The node that detects the failure may send a notification of the failure to its neighboring nodes**. For this purpose, all the network interfaces of a particular node may be part of a special multicast group. The notification may include the SRLG that corresponds to the particular failure that occurred, allowing it to be transmitted to particular nodes that may be affected by the failure.

Jain, ¶¶ 7 and 14 (emphasis added). As shown above, *Jain's* fault notification message does not comprise any binding information, and *Jain* does not disclose that the fault notification message is sent from the PSL to the PML. Further, *Jain's* fault notification message does not contain binding information. Thus, *Jain* fails to disclose a PSL router that transmits a notification message comprising binding information to a PML router. *Owens* fails to make up for the

deficiencies in *Lewis* and *Jain*. As such, the combination of *Lewis, Jain*, and *Owen* fails to disclose at least one limitation of independent claims 1 and 3, and consequently fails to render obvious claims 1-18.

New Claims

New claim 19 recites novel and non-obvious aspects of the invention not disclosed by the cited prior art. Support for new claim 19 is found in the specification, thus no new matter is contained in claim 19. New claim 19 depends from independent claim 1, which is allowable for the reasons given above. Thus, new claim 19 is also allowable.

Non-Final Next Office Action

The Applicants would like to point out that claim 3 has been rewritten into independent form. In addition, the Applicants would like to remind the Examiner of the rules regarding finality of office actions. Specifically, MPEP § 706.07(a) states that the next office action should not be final if the Examiner changes the grounds of rejection for claim 3. Should the Examiner insist on making the next office action final based on a new ground of rejection for claim 3, the Applicants request a telephone conference with the Examiner and the Supervisory Patent Examiner to clarify the finality issue, and thereby potentially avoid a petition under 37 C.F.R. § 1.181.

CONCLUSION

Consideration of the foregoing amendments and remarks, reconsideration of the application, and withdrawal of the rejections and objections is respectfully requested by the Applicants. No new matter is introduced by way of the amendment. It is believed that each ground of rejection raised in the Office Action dated May 12, 2010, has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account Number 50-1515 of Conley Rose, P.C., Texas. If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,
CONLEY ROSE, P.C.

Date: 7/27/10

Grant Rodolph
Reg. No. 50,487

ATTORNEY FOR APPLICANTS

5601 Granite Parkway, Suite 750
Plano, TX 75024
(972) 731-2288
(972) 731-2289 (Facsimile)